SPM simulator price list

The SPM simulator can process both image data obtained by theoretical simulations and experiments on the same platform. It is the world's first novel commercial software.

Theoretical numerical simulations: Adoption of the finite element method, the molecular dynamics, and the density functional based tight binding (DFTB) method.

The 3D processing of experimental image data: SPM simulator supports data file formats from worldwide instrument manufactures. Noise reduction, estimation of shapes of tips, and many other functions are prepared.
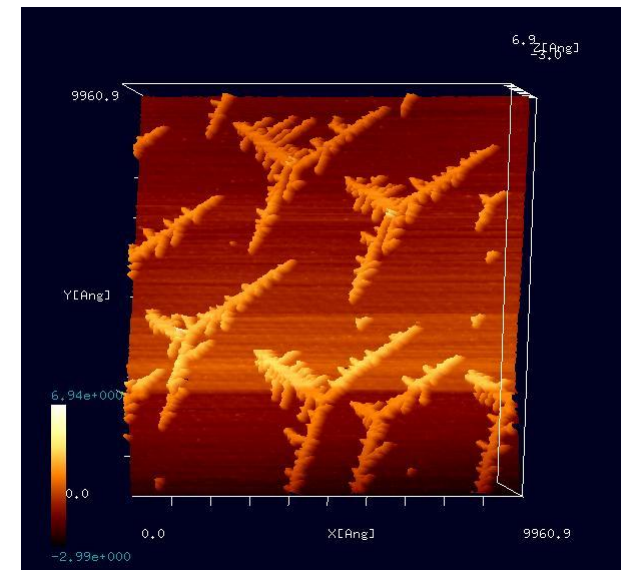
Viscoelastic contact mechanics for simulations of bio-soft materials

The DFTB parameters for 69 kinds of elements (Almost all compounds are available.)

Processing both images obtained by theoretical simulations and experiments, you can clarify surfaces of materials precisely.

[An SPM image provided by Fukutani laboratory in Institute of Industrial Science, University of Tokyo.
S. Ogura et al., Phys. Rev. B 73, 125442 (2006); S. Ogura and K. Fukutani, J. Phys.: Condens. Matter 21 (2009) 474210.]
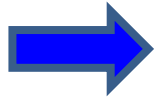
Concepts

Processing both images obtained by theoretical simulations and SPM experiments

Analyzing bio-soft materials with viscoelastic contact mechanics

Simulating almost all compounds with the DFTB parameters for 69 kinds of elements

→ AFM, KPFM, STM/STS, band structure calculations

Application areas are extending!

Scope

We would like to provide various viewpoints to users.

From viewpoints of users in the field of bio-soft materials

Viscoelastic contact mechanics

The tapping mode AFM in liquid

From viewpoints of users in the field of semiconductors

Quantum mechanical analyses (the density functional based tight binding (DFTB) method)

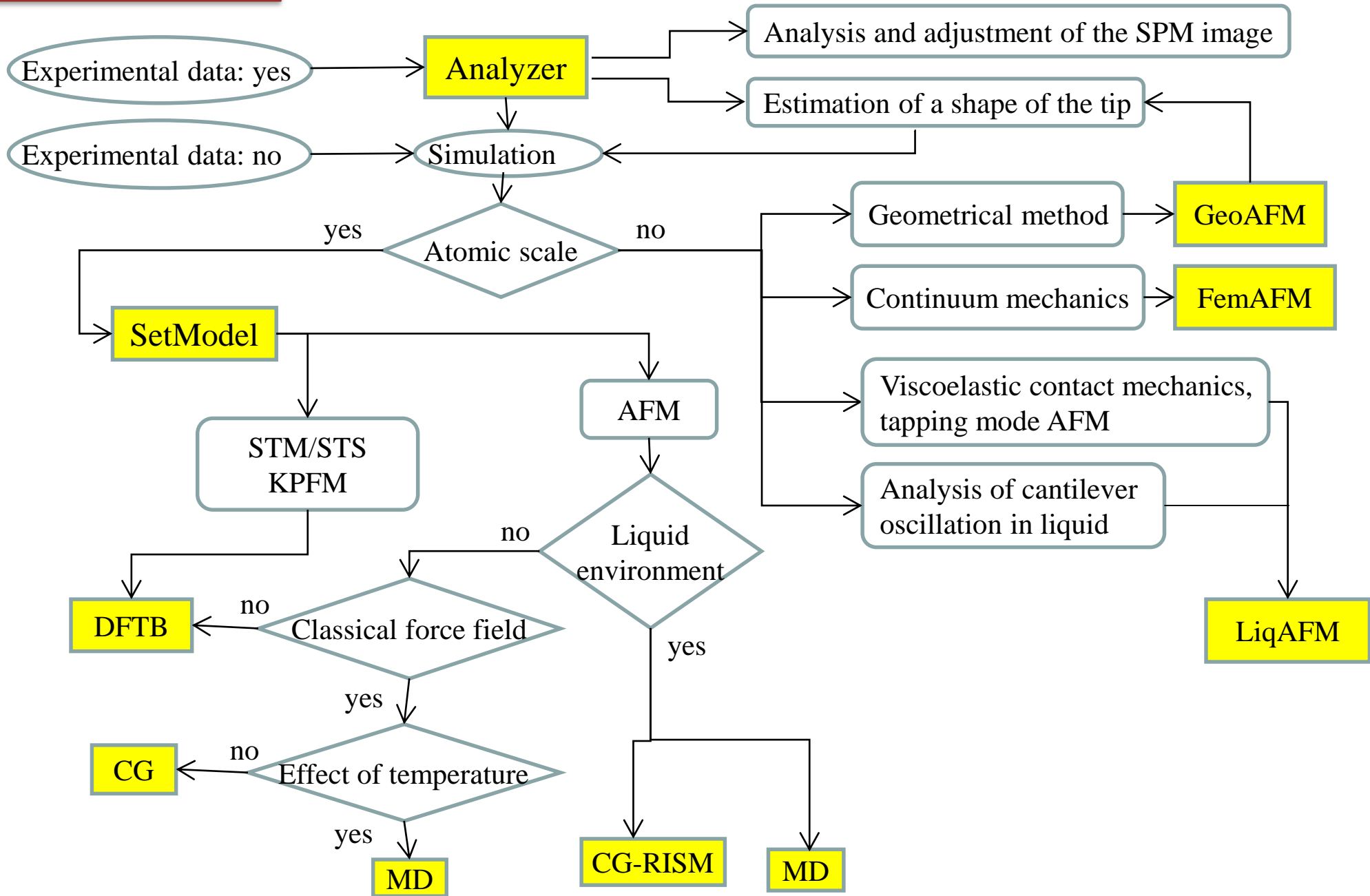Various organic and non-organic compounds made up of 69 elements

→ Utilizations of the SPM simulator in interdisciplinary areas are expected.

Solvers included in the SPM Simulator

Solver	Function	Characteristics
Analyzer	Experimental Image Data Processor	A preprocessor for simulations. Transformation from experimental data into input data for simulations.
SetModel	Sample Modeling	A preprocessor for simulations. Construction of molecular models from atoms for tips and samples.
GeoAFM	Geometrical Mutual AFM Simulator	A practical solver for mesoscopic and macroscopic simulations. Approximate results are obtained very quickly. The GeoAFM reconstructs the one out of the other two among three geometrical elements, a tip, a sample, and its AFM image.
FemAFM	Finite Element Method AFM Simulator	Considering elastic deformations of a tip and a sample, the FemAFM performs AFM simulations in mesoscopic and macroscopic scales.
LiqAFM (tapping)	Soft Material Liquid AFM Simulator Viscoelastic Contact Mechanics Simulator	Examining oscillation of a cantilever in liquid, the LiqAFM simulates the tapping mode AFM for viscoelastic materials. Using the standard theory, it calculates both the frequency shift and phase shift AFM images. The LiqAFM can analyze both soft matters and high polymers.
CG	Geometry Optimizing AFM Image Simulator	According to the classical force fields, the CG performs optimization of molecular models constructed from atoms.
MD	Molecular Dynamics AFM Image Simulator	According to the classical mechanics, the MD performs the molecular dynamics simulations.
DFTB	Quantum Mechanical SPM Simulator	According to the quantum mechanics, the DFTB calculates the force the tip applies to the surface and the tunneling current.

practical — GeoAFM, FemAFM, LiqAFM (tapping)

advanced — CG, MD, DFTB

De facto standard   Flowchart for how to select the solver

Experimental data: yes → **Analyzer** → Analysis and adjustment of the SPM image

Analyzer → Estimation of a shape of the tip

Experimental data: no → Simulation ← Estimation of a shape of the tip

Simulation → Atomic scale

Atomic scale — yes → **SetModel**

Atomic scale — no → Geometrical method → **GeoAFM**

→ Continuum mechanics → **FemAFM**

→ Viscoelastic contact mechanics, tapping mode AFM

→ Analysis of cantilever oscillation in liquid

SetModel → STM/STS KPFM

SetModel → AFM

STM/STS KPFM → **DFTB**

AFM → Liquid environment

Liquid environment — no → Classical force field

Liquid environment — yes → **CG-RISM**, **MD**

Classical force field — no → **DFTB**

Classical force field — yes → Effect of temperature

Effect of temperature — no → **CG**

Effect of temperature — yes → **MD**

→ **LiqAFM**

The database of parameters for the DFTB solver

Most types of DFTB solvers distributed generally do not disclose atomic interaction parameters for various elements.
By contrast,
Advanced Algorithm & Systems discloses atomic interaction parameters for the DFTB solver included in the SPM simulator. We prepare the quantum mechanical parameters for 69 kinds of elements.

12 elements: H, C, N, O, P, Al, Si, Ti, Ru, W, Pt, Au

27 elements: S, F, Cl, Br, I, Ge, Ga, As, Na, Ag, Bi, Mg, Cu, Li, B

69 elements:
Transition metals: V, Cr, Mn, Fe, Co, Ni, Zr, Nb, Mo, Tc, Re, Rh, Pd, Ir, Y, Sc
Lanthanides: La, Ce, Gd, Tb, Dy, Ho, Er, Tm, Yb
Metalloids: Se, Sb, Te
Alkali metals: K, Cs, Rb
Alkaline earth metals: Ca, Ba, Sr
Base metals: Be, Zn, In, Sn, Cd, Hg, Pb
An actinoids: U

You can investigate almost all organic and non-organic compounds for STM/STS, AFM, and KPFM simulations.

The database of atomic interaction parameters for the DFTB solver

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	H																	He
2	Li	Be											B	C	N	O	F	Ne
3	Na	Mg											Al	Si	P	S	Cl	Ar
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	*1	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	*2	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	113	Fl	115	Lv	117	118

*1 Lanthanides	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
*2 Actinoids	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

Elementary 27 elements

12 H, C, N, O, Al, Si, P, Ti, Ru, W, Pt, Au

15 Li, B, F, Na, Mg, S, Cl, Cu, Ga, Ge, As, Br, Ag, I, Bi

Additional 32 elements

17 Sc, V, Cr, Mn, Fe, Co, Ni, Zn, Y, Zr, Nb, Mo, Tc, Rh, Pd, Re, Ir (Transition metals)

8 La, Ce, Gd, Tb, Dy, Ho, Er, Tm (Lanthanides)

4 Se, In, Sb, Te (Metalloids)

3 K, Rb, Cs (Alkali metals)

Advanced 10 elements

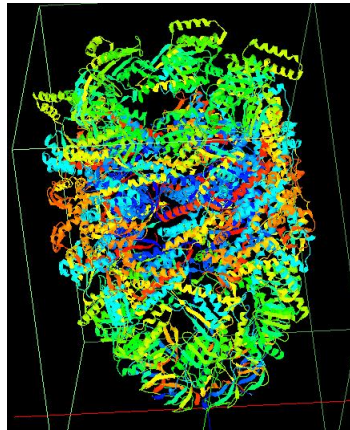10 Be, Ca, Sr, Ba, Cd, Sn, Hg, Pb, Yb, U

AFM simulations for bio-soft materials

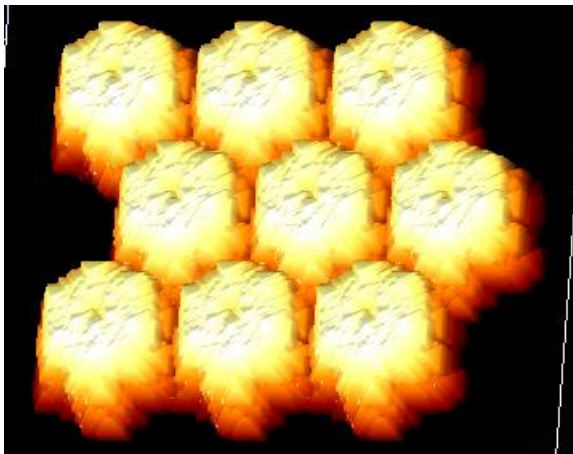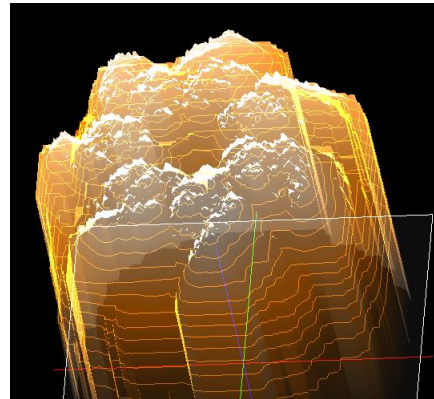You can perform AFM simulations for micrometer scale.

You can use three-dimensional structural data provided by the Protein Data Bank.

You can simulate large and complex protein molecules very quickly within a minute.
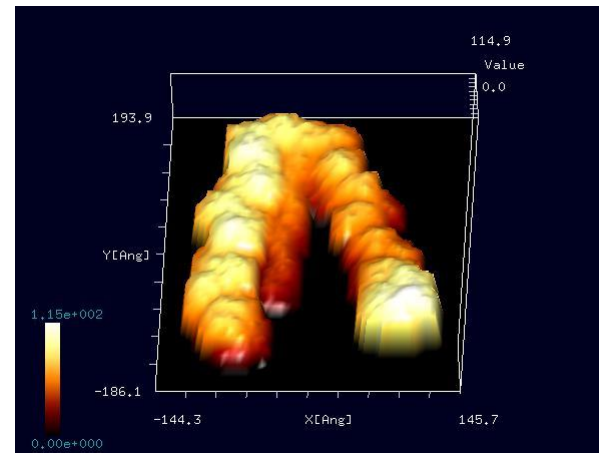
Data of a large molecule

An AFM image

A simulation of an AFM image for aligned connexons

A simulation of an AFM image for a myosin

PURCHASE TYPE	Purchase contract	Rental contract

integrated set

| **Standard version** | A set of all solvers WITHOUT DFTB solver. | for biomaterials and soft materials |
| **Professional version** | A set of all solvers WITH DFTB solver.
You can choose a set of available chemical elements from 12 kinds, 27 kinds or 69kinds. | for all kinds of materials |

each solver's set — The sets include each solver, Analyzer and SetModel.

GeoAFM set

FemAFM set

LiqAFM set — for biomaterials and soft materials

CG set

MD set

DFTB set — You can choose a set of available chemical elements from 12 kinds, 27 kinds or 69kinds. — inorganic and organic semiconductors

Software is sent by post in a CR-ROM form.
We manage the software by issuing licence files. If the maintenance fee or the rental fee is not paid, licence file will be out of date and you can't use the software.

CHARACTERISTIC OF EACH SET

Standard version **integrated set**

- It includes all solvers but a DFTB solver.
- Appropriate for the AFM study on biomaterials and soft materials.
- Molecular structure data provided by Protein Data Bank can be used.
- You can study viscoelastic contact problems, such as adhesion brought about by surface tension between a tip and a sample.
- Deformation by pushing a tip on a sample is reproduced by the molecular dynamics method.
- You can study structural deformation of a sample.

Professional version **integrated set**

- It includes all solvers (with DFTB solver).
- You can treat all kinds of material including inorganic semiconductors and organic semiconductors, in addition to biomaterials and soft materials.
- You can choose a set of available chemical elements from 12 kinds set, 27 kinds set and 69 kinds set for quantum mechanical solver, DFTB.
- You can treat all kinds of materials in reality because the number of available elements reaches 69.
- STM, STS, AFM and KPFM can be simulated.
- Band calculation function for a sample compound is included.
- Preprocess function for ab initio calculation software PHASE/0 (preparation for input data) is included.

GeoAFM set   **each solver's set**

- It consists of GeoAFM, Analyzer and SetModel.
- Appropriate for the AFM study on biomaterials and soft materials.
- Molecular structure data provided by Protein Data Bank can be used.
- Calculation time is no more than 1 minute.

FemAFM set   **each solver's set**

- It consists of FemAFM, Analyzer and SetModel.
- Appropriate for the AFM study on biomaterials and soft materials.
- You can study structural deformation of a tip and a sample by the finite element method.
- You can study viscoelastic contact problems, such as adhesion brought about by surface tension between a tip and a sample.
- Frequency shift image of AFM also can be simulated.

LiqAFM set   **each solver's set**

- It consists of LiqAFM, Analyzer and SetModel.
- Appropriate for the AFM study on biomaterials and soft materials.
- You can analyze vibration of a cantilever in a liquid environment.
- You can study viscoelastic contact problems, such as adhesion brought about by surface tension between a tip and a sample.
- Frequency shift image and phase shift image of AFM can be simulated.

CG set   **each solver's set**

- It consists of CG, Analyzer and SetModel.
- Appropriate for the AFM study on biomaterials and soft materials.
- It searches an energetically stable molecular structure and reproduces structural optimization.
- Force curve measured by a tip can be calculated.

MD set   **each solver's set**

- It consists of MD, Analyzer and SetModel.
- Appropriate for the AFM study on biomaterials and soft materials.
- Deformation of a sample is studied by the molecular dynamics method.
- Force curve measured by a tip can be calculated.

DFTB set   **each solver's set**

- It consists of DFTB, Analyzer and SetModel.
- We can use it on all area of material study such as biomaterials, soft materials, inorganic semiconductors and organic semiconductors.
- You can choose a set of available chemical elements from 12 kinds set, 27 kinds set and 69 kinds set for quantum mechanical solver, DFTB.
- You can treat all kinds of materials in reality because the number of available elements reaches 69.
- STM, STS, AFM and KPFM can be simulated.
- Band calculation function for a sample compound is included.
- Preprocess function for ab initio calculation software PHASE/0 is included.

Contract systems and prices for the integrated type of the SPM Simulator
(DFTB 69 elements included as a standard option)

(Japanese yen)

Standard Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	1,600,000	2,700,000
	Maintenance cost	300,000/year	400,000/year
Lease	Price for the 1st, 2nd and 3rd year	810,000/year	1,080,000/year
	Price for the 4th year and later	400,000/year	600,000/year

**Standard Type contains all solvers without DFTB.
It is suitable for the fields of the biotechnology and the soft-materials.**

For example, an academic institution will pay 1,900,000 yen in total for the 1st year in case of the purchase contract.

Professional Type	DFTB 12 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,100,000	3,500,000
	Maintenance cost	300,000/year	480,000/year
Lease	Price for the 1st, 2nd and 3rd year	900,000/year	1,200,000/year
	Price for the 4th year and later	500,000/year	700,000/year

**Professional Type contains all solvers. This table is for 12 elements selected.
It is available for all material fields. (Revised in July 2017. DFTB 69 elements included as a standard option.)**

Contract systems and prices for the integrated type of the SPM Simulator

(Japanese yen)

Professional Type	DFTB 27 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,100,000	3,500,000
	Maintenance cost	300,000/year	480,000/year
Lease	Price for the 1st, 2nd and 3rd year	900,000/year	1,200,000/year
	Price for the 4th year and later	500,000/year	700,000/year

Professional Type contains all solvers. This table is for 27 elements selected.
It is available for all material fields. (Revised in July 2017. DFTB 69 elements included as a standard option.)

Professional Type	DFTB 69 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,100,000	3,500,000
	Maintenance cost	300,000/year	480,000/year
Lease	Price for the 1st, 2nd and 3rd year	900,000/year	1,200,000/year
	Price for the 4th year and later	500,000/year	700,000/year

Professional Type contains all solvers. This table is for 69 elements selected.
It is available for all material fields. (Revised in July 2017. DFTB 69 elements included as a standard option.)

Contract systems and prices for the component type of the SPM Simulator

(Japanese yen)

GeoAFM Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	1,400,000	1,600,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	500,000/year	700,000/year
	Price for the 4th year and later	450,000/year	550,000/year

**GeoAFM Type contains a set of three solvers; Analyzer, SetModel and GeoAFM .
It is suitable for the fields of the biotechnology and the soft-materials. (Revised in July 2017.
We can sell each solver to you.)**

FemAFM Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	1,400,000	1,800,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	500,000/year	700,000/year
	Price for the 4th year and later	450,000/year	550,000/year

**FemAFM Type contains a set of three solvers; Analyzer, SetModel and FemAFM .
It is suitable for the fields of the biotechnology and the soft-materials. (Revised in July 2017.
We can sell each solver to you.)**

Contract systems and prices for the component type of the SPM Simulator

(Japanese yen)

LiqAFM Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	1,500,000	1,900,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	500,000/year	700,000/year
	Price for the 4th year and later	450,000/year	550,000/year

LiqAFM Type contains a set of three solvers; Analyzer, SetModel and LiqAFM .
It is suitable for the fields of the biotechnology and the soft-materials. (Revised in July 2017. We can sell each solver to you.)

CG Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	1,500,000	1,900,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	500,000/year	700,000/year
	Price for the 4th year and later	550,000/year	650,000/year

CG Type contains a set of three solvers; Analyzer, SetModel and CG .
It is suitable for the fields of the biotechnology and the soft-materials. (Revised in July 2017. We can sell each solver to you.)

Contract systems and prices for the component type of the SPM Simulator

(Japanese yen)

MD Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	1,500,000	1,900,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	500,000/year	700,000/year
	Price for the 4th year and later	550,000/year	650,000/year

MD Type contains a set of three solvers; Analyzer, SetModel and MD.
It is suitable for the fields of the biotechnology and the soft-materials. (Revised in July 2017.
We can sell each solver to you.)

DFTB Type	DFTB 12 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,000,000	2,500,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	600,000/year	800,000/year
	Price for the 4th year and later	480,000/year	600,000/year

DFTB Type contains a set of three solvers; Analyzer, SetModel and DFTB.
This table is for 12 elements selected.
It is suitable for the fields of the inorganic/organic materials such as the semiconductors.
(Revised in July 2017. We can sell each solver to you.)

Contract systems and prices for the component type of the SPM Simulator (Japanese yen)

DFTB Type	DFTB 27 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,000,000	2,500,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	800,000/year	1,000,000/year
	Price for the 4th year and later	480,000/year	600,000/year

DFTB Type contains a set of three solvers; Analyzer, SetModel and DFTB.
This table is for 27 elements selected.
It is suitable for the fields of the inorganic/organic materials such as the semiconductors.
(Revised in July 2017. We can sell each solver to you.)

DFTB Type	DFTB 69 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,000,000	2,500,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	600,000/year	800,000/year
	Price for the 4th year and later	480,000/year	600,000/year

DFTB Type contains a set of three solvers; Analyzer, SetModel and DFTB.
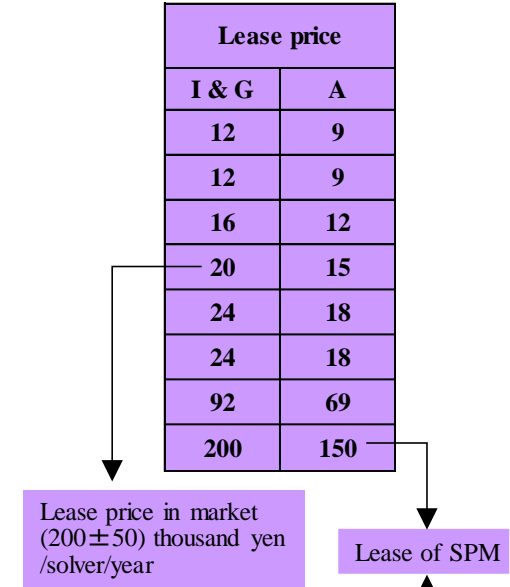**This table is for 69 elements selected.**
It is suitable for the fields of the inorganic/organic materials such as the semiconductors.
(Revised in July 2017. We can sell each solver to you.)

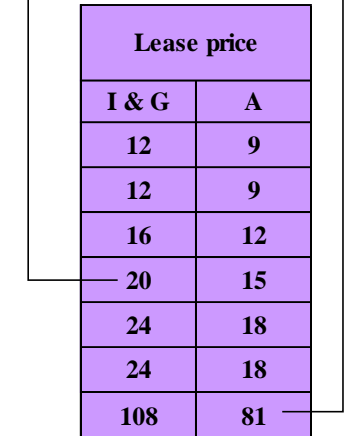# Setting prices of the seven component solvers in the SPM Simulator (Purchase/Lease)

(Thousand Japanese yen)

Professional Type

		Difficulty	Purchase prices of solvers with economies of scale							Lease price	
			7	6	5	4 ●	3	2	1	I & G	A
Analyzer	Digital Image Processor for Experimental Data	0.60	206	221	237	253	269	284	300	12	9
GeoAFM	Geometrical Mutual AFM Simulator	0.60	206	221	237	253	269	284	300	12	9
FemAFM	Finite Element Method AFM Simulator ●	0.80	274	295	316	337 ●	358	379	400	16	12
LiqAFM	Soft Material Liquid AFM Simulator	1.00	343	369	395	421	448	474	500	20	15
CG	Geometry Optimizing AFM Image Simulator ●	1.20	411	443	474	506 ●	537	569	600	24	18
MD	Molecular Dynamics AFM Image Simulator ●	1.20	411	443	474	506 ●	537	569	600	24	18
DFTB	Quantum Mechanical SPM Simulator ●	1.60	548	590	632	673 ●	716	785	800	92	69

Sum of the setting prices of seven solvers → **2,399**   Sum of the setting prices of seven solvers → **3,500**   200   150

Basic price for Academia with economies of scale
Special treatment for academia   342.9/500   **2,399**

Base price for Industry & Government
(It compares favourably with the market price)   **3,500**

Lease price in market (200±50) thousand yen /solver/year

Lease of SPM

(Thousand Japanese yen)

Standard Type

		Difficulty	Purchase prices of solvers with economies of scale						Lease price	
			6	5	4	3 ▲	2	1	I & G	A
Analyzer	Digital Image Processor for Experimental Data	0.60	178	202	227	251	276	300	12	9
GeoAFM	Geometrical Mutual AFM Simulator ▲	0.60	178	202	227	251 ▲	276	300	12	9
FemAFM	Finite Element Method AFM Simulator	0.80	237	270	302	335	367	400	16	12
LiqAFM	Soft Material Liquid AFM Simulator ▲	1.00	296	337	378	419 ▲	459	500	20	15
CG	Geometry Optimizing AFM Image Simulator	1.20	356	404	453	502	551	600	24	18
MD	Molecular Dynamics AFM Image Simulator ▲	1.20	356	404	453	502 ▲	551	600	24	18

Sum of the setting prices of seven solvers → **1,601**   Sum of the setting prices of six solvers   **2,700**   108   81

Basic price for Academia with economies of scale
Special treatment for academia   160/270

Base price for Industry & Government
(It compares favourably with the market price)

A : Academia
I : Industry
G : Goverment

Contract systems and prices for the integrated type of the SPM Simulator
(This is not an official version. DLVO functions and DFTB 111 elements will be added in future. These are reference prices.)

(Japanese yen)

Standard Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	1,600,000	2,700,000
	Maintenance cost	300,000/year	400,000/year
Lease	Price for the 1st, 2nd and 3rd year	810,000/year	1,080,000/year
	Price for the 4th year and later	400,000/year	600,000/year

Standard Type contains all solvers without DFTB.
It is suitable for the fields of the biotechnology and the soft-materials.

For example, an academic institution will pay 1,900,000 yen in total for the 1st year in case of the purchase contract.

Professional Type	DFTB 12 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,100,000	3,500,000
	Maintenance cost	300,000/year	480,000/year
Lease	Price for the 1st, 2nd and 3rd year	900,000/year	1,200,000/year
	Price for the 4th year and later	500,000/year	700,000/year

Professional Type contains all solvers. This table is for 12 elements selected.
It is available for all material fields.

Contract systems and prices for the integrated type of the SPM Simulator

(Japanese yen)

Professional Type	DFTB 27 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,700,000	4,500,000
	Maintenance cost	500,000/year	600,000/year
Lease	Price for the 1st, 2nd and 3rd year	1,000,000/year	1,400,000/year
	Price for the 4th year and later	650,000/year	800,000/year

**Professional Type contains all solvers. This table is for 27 elements selected.
It is available for all material fields.**

Professional Type	DFTB 69 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	3,430,000	5,000,000
	Maintenance cost	500,000/year	600,000/year
Lease	Price for the 1st, 2nd and 3rd year	1,500,000/year	2,000,000/year
	Price for the 4th year and later	650,000/year	800,000/year

**Professional Type contains all solvers. This table is for 69 elements selected.
It is available for all material fields.**

Contract systems and prices for the component type of the SPM Simulator

(Japanese yen)

GeoAFM Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	1,680,000	2,100,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	720,000/year	900,000/year
	Price for the 4th year and later	450,000/year	550,000/year

**GeoAFM Type contains a set of three solvers; Analyzer, SetModel and GeoAFM .
It is suitable for the fields of the biotechnology and the soft-materials.**

FemAFM Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	1,840,000	2,300,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	800,000/year	1,000,000/year
	Price for the 4th year and later	450,000/year	550,000/year

**FemAFM Type contains a set of three solvers; Analyzer, SetModel and FemAFM .
It is suitable for the fields of the biotechnology and the soft-materials.**

Contract systems and prices for the component type of the SPM Simulator (Japanese yen)

LiqAFM Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	2,000,000	2,500,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	880,000/year	1,100,000/year
	Price for the 4th year and later	450,000/year	550,000/year

LiqAFM Type contains a set of three solvers; Analyzer, SetModel and LiqAFM .
It is suitable for the fields of the biotechnology and the soft-materials.

CG Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	2,000,000	2,500,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	880,000/year	1,100,000/year
	Price for the 4th year and later	450,000/year	550,000/year

CG Type contains a set of three solvers; Analyzer, SetModel and CG .
It is suitable for the fields of the biotechnology and the soft-materials.

Contract systems and prices for the component type of the SPM Simulator

(Japanese yen)

MD Type		Academia	Industry, Goverment
Purchase	Price for the 1st year	2,000,000	2,500,000
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	880,000/year	1,100,000/year
	Price for the 4th year and later	450,000/year	550,000/year

MD Type contains a set of three solvers; Analyzer, SetModel and MD.
It is suitable for the fields of the biotechnology and the soft-materials.

DFTB Type	DFTB 12 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,640,000 + parameter fee	3,300,000 + parameter fee
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	720,000/year	900,000/year
	Price for the 4th year and later	480,000/year	600,000/year

DFTB Type contains a set of three solvers; Analyzer, SetModel and DFTB.
This table is for 12 elements selected.
It is suitable for the fields of the inorganic/organic materials such as the semiconductors.

Contract systems and prices for the component type of the SPM Simulator

(Japanese yen)

DFTB Type	DFTB 27 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,640,000 + parameter fee	3,300,000 + parameter fee
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	800,000/year	1,000,000/year
	Price for the 4th year and later	480,000/year	600,000/year

DFTB Type contains a set of three solvers; Analyzer, SetModel and DFTB.
This table is for 27 elements selected.
It is suitable for the fields of the inorganic/organic materials such as the semiconductors.

DFTB Type	DFTB 69 elements	Academia	Industry, Goverment
Purchase	Price for the 1st year	2,640,000 + parameter fee	3,300,000 + parameter fee
	Maintenance cost	350,000/year	350,000/year
Lease	Price for the 1st, 2nd and 3rd year	880,000/year	1,100,000/year
	Price for the 4th year and later	480,000/year	600,000/year

DFTB Type contains a set of three solvers; Analyzer, SetModel and DFTB.
This table is for 69 elements selected.
It is suitable for the fields of the inorganic/organic materials such as the semiconductors.
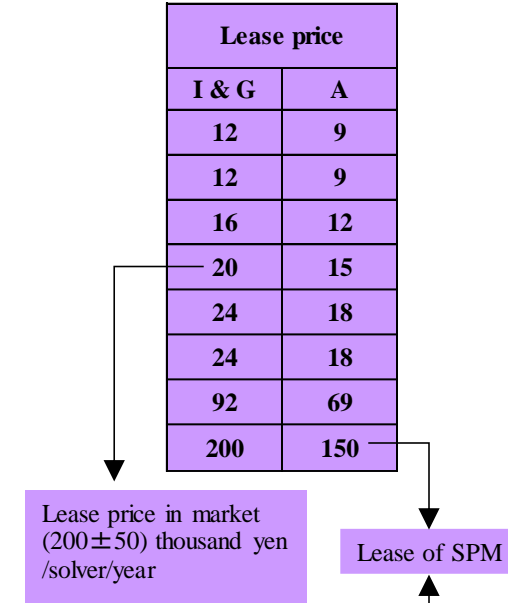
Setting prices of the seven component solvers in the SPM Simulator (Purchase/Lease)
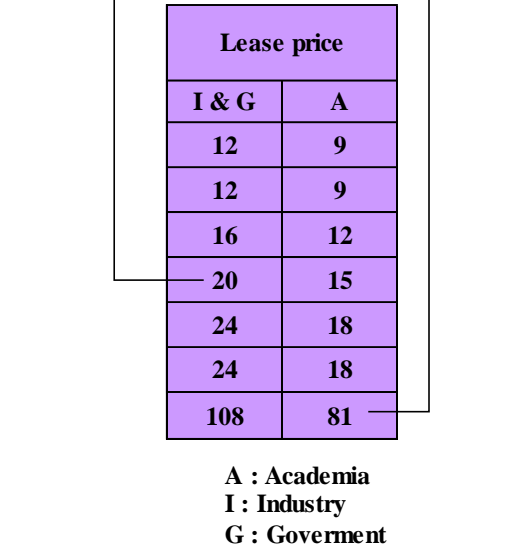
(Thousand Japanese yen)

Professional Type

		Difficulty	Purchase prices of solvers with economies of scale							Lease price	
			7	6	5	4 ●	3	2	1	I & G	A
Analyzer	Digital Image Processor for Experimental Data	0.60	206	221	237	253	269	284	300	12	9
GeoAFM	Geometrical Mutual AFM Simulator	0.60	206	221	237	253	269	284	300	12	9
FemAFM	Finite Element Method AFM Simulator ●	0.80	274	295	316	337 ●	358	379	400	16	12
LiqAFM	Soft Material Liquid AFM Simulator	1.00	343	369	395	421	448	474	500	20	15
CG	Geometry Optimizing AFM Image Simulator ●	1.20	411	443	474	506 ●	537	569	600	24	18
MD	Molecular Dynamics AFM Image Simulator ●	1.20	411	443	474	506 ●	537	569	600	24	18
DFTB	Quantum Mechanical SPM Simulator ●	4.60	1,577	1,698	1,818	1,939 ●	2,059	2,180	2,300	92	69

Sum of the setting prices of seven solvers → 3,429
Basic price for Academia with economies of scale
Special treatment for academia   342.9/500 → 3,429

Sum of the setting prices of seven solvers → 5,000
Base price for Industry & Government
(It compares favourably with the market price) → 5,000

Lease price	
I & G	A
200	150

Lease price in market (200±50) thousand yen /solver/year

Lease of SPM

(Thousand Japanese yen)

Standard Type

		Difficulty	Purchase prices of solvers with economies of scale						Lease price	
			6	5	4	3 ▲	2	1	I & G	A
Analyzer	Digital Image Processor for Experimental Data	0.60	178	202	227	251	276	300	12	9
GeoAFM	Geometrical Mutual AFM Simulator ▲	0.60	178	202	227	251 ▲	276	300	12	9
FemAFM	Finite Element Method AFM Simulator	0.80	237	270	302	335	367	400	16	12
LiqAFM	Soft Material Liquid AFM Simulator ▲	1.00	296	337	378	419 ▲	459	500	20	15
CG	Geometry Optimizing AFM Image Simulator	1.20	356	404	453	502	551	600	24	18
MD	Molecular Dynamics AFM Image Simulator ▲	1.20	356	404	453	502 ▲	551	600	24	18

Sum of the setting prices of seven solvers → 1,601
Basic price for Academia with economies of scale
Special treatment for academia   160/270

Sum of the setting prices of six solvers 2,700
Base price for Industry & Government
(It compares favourably with the market price)

Lease price	
I & G	A
108	81

A : Academia
I : Industry
G : Goverment

Guidance for the flexible operation of a transaction, not a purchase contract, that is a special treatment to listen to your request

- We propose a price down by a reduction of the number of elements for DFTB calculation.
- We propose a price down for business partnerships such as SPM device makers, sales agencies and strategic collaborators.
- If you make a lease contract, we propose a plan to decrease an initial payment by extending the contract period, and decreasing a lease price per month.
- We propose an additional estimate for a customized development, a commission of simulation, a commission of consultation and etc.

1) Those who intend to try to learn the SPM Simulator before introduction of the software.

2) Those who intend to try the SPM Simulator by the use of a sample material of your interest.

3) Those who intend to verify the functions of the SPM Simulator before purchase the software.
   We propose a consultation to try your own theme, to help your calculation and to evaluate the software product.

4) Those who intend to entrust a calculation of your own materials or samples that you have an interest.

5) Those who intend to entrust a consultation of the SPM Simulator with a function of a viscoelastic contact analyses.
   We provide the operation navigation system for the SPM Simulator, so that you learn the skills to use the Simulator by self OJT from a beginner to a nonspecialist.
   https://www.aasri.jp/pub/spm/assistant/SPM_Simulator_assistant_top.htm

6) Those who use the PHASE system software.
   http://www.ciss.iis.u-tokyo.ac.jp/supercomputer/event/event.php?id=77
   https://azuma.nims.go.jp/events/semi2015/semi20160119